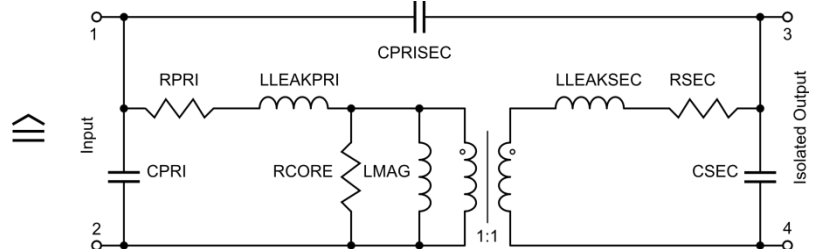
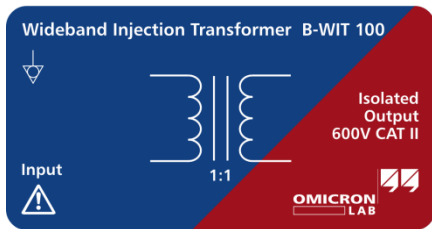


# B-WIT 100 SPICE Model

We provide a simple lumped element circuit model for the B-WIT 100 injection transformer. The model is shown in the following figure:



## SPICE Subcircuit Listing:

```

* BWIT 100 WIDEBAND INJECTION TRANSFORMER MODEL
* CREATED BY OMICRON Lab ON APRIL 7, 2011
* VERSION 1.0
*
* CONNECTIONS: PRIMARY SIDE SIGNAL
*               | PRIMARY SIDE GROUND
*               | | ISOLATED OUTPUT 1
*               | | | ISOLATED OUTPUT 2
*               | | | |
*               | | | |
.SUBCKT BWIT 1 2 3 4
* CAPACITORS
CPRI 1 2 14e-12
CPRISEC 1 3 85e-12
CSEC 3 4 14e-12
* RESISTORS
RPRI 1 5 0.36
RCORE 6 2 35e3
RSEC 8 3 0.362
* INDUCTANCES
LLEAKPRI 5 6 0.85e-6
LLEAKSEC 7 8 0.85e-6
LMAG 6 2 199e-3
* IDEAL 1TO1 TRANSFORMER
E 9 4 6 2 1
F 6 2 VM 1
VM 9 7
.ENDS BWIT
    
```

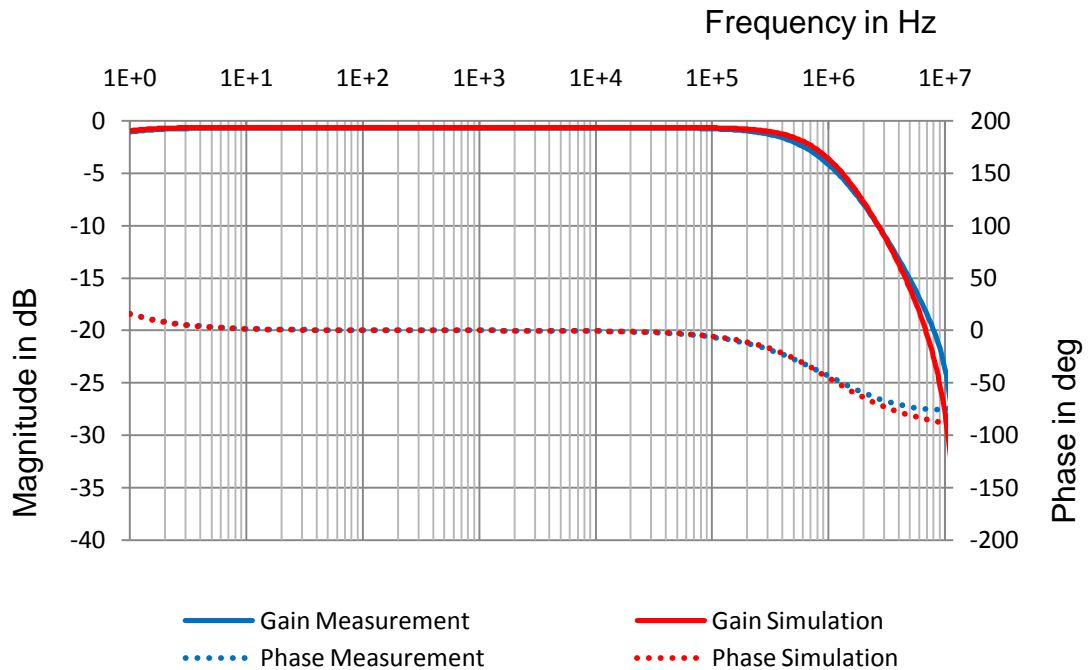
The model has 4 connections.

1 & 2 are on the primary side where 2 is the ground connector of the BNC plug.  
2 & 3 are on the isolated secondary side (banana connectors).

### Model Performance:

The following chart shows simulation results gathered with the B-WIT model compared to a measurement.

Compared is the voltage gain from primary to secondary. The secondary side was loaded with a 10  $\Omega$  resistor. This is the recommended injection resistor value.



**Note:** This is a linear model for small signals (no saturation and large signal effects). The Model is a lumped element circuit model with no frequency dependencies but shows good voltage gain correlation in the frequency range 1 Hz to 10 MHz.